

## *Acrosterigma suduirauti*, a new species of the *Acrosterigma uniornatum* species group (Bivalvia: Cardiidae) from the Philippines

Jacques VIDAL †<sup>1</sup>

Attaché au Muséum national d'Histoire naturelle,  
55 rue Buffon, 75005 Paris, France

Jan Johan TER POORTEN

Siriusstraat 57, 1223 AM Hilversum, The Netherlands;  
terpoorten@chello.nl

**KEYWORDS.** Bivalvia, Cardiidae, Philippines, *Acrosterigma suduirauti*, n. sp.

**ABSTRACT.** *Acrosterigma suduirauti* n. sp. is described from shells originating from the Philippines. It belongs to the species group of *A. uniornatum* Vidal, 1999 and is especially close to *A. profundum* Vidal, 1999, with which it is compared. It differs mainly by the nature of the rib sculpture, the outline, the colouration and the geographic distribution.

### INTRODUCTION

In his review of the 'elongated cockles' Vidal (1999) formulated several different species groups with shared characters. One of these is the group of *Acrosterigma uniornatum* Vidal, 1999, including four Recent species and one fossil. The following main characters unite the taxa of this group:

- moderately pointed, ovoid and equilateral shell;
- well marked and delineated, slightly hollowed lunula;
- moderately angled hinge with cardinals slightly connected in the right valve;
- ribs on posterior quarter bearing long thin scales, regularly obliquely placed.

The recent discovery in the Philippines of another extant species confirms the validity of this grouping. Another ecological character of this group is confirmed too: these species live in relatively deep water for Cardiidae, mainly from about 100 m to more than 500 m. They are all characterized and separated from other *Acrosterigma* species by the particular rib morphology of the posterior part of the shell, with ribs bearing regularly disposed parallel straight oblique scales, and by the progressive extension of this ornamentation more or less far into the median-posterior part, lacking any sharp contrast between the posterior slope and the rest of the shell (figs 11-12).

Another observed constant peculiarity is the partial connection of the cardinals in the right valve, a feature never observed in other species groups in *Acrosterigma* or the related *Vasticardium*. The various species of the *A. uniornatum* group can be separated one from another by the number of ribs and the

secondary ornamentation of the ribs in the median part of the shell.

### Abbreviations

MHNBx: Muséum d'Histoire Naturelle, Bordeaux, France.

MNHN: Muséum national d'Histoire naturelle, Paris, France.

ZMA: Zoological Museum Amsterdam, The Netherlands.

HD: Private collection H. Dekker, Winkel, The Netherlands.

SH: Private collection S. Hobbs, Cape May, U.S.A.

TP: Private collection J.J. ter Poorten, Hilversum, The Netherlands.

### MATERIAL AND METHODS

The type series consists of four paired valves; in addition four supplementary paired valves were studied from private collections.

Measurements: H = Height, the longest distance from the umbo to the ventral margin; L = Length, measured parallel to the hinge; W = Width, or maximum thickness of the shell; p.v. = paired valves.

As far as methods of identification are concerned, we must underline the importance of the rib morphology (structure and ornamentation of the ribs).

### SYSTEMATICS

Family **CARDIIDAE** Lamarck, 1809

Subfamily **CARDIINAE** Lamarck, 1809

Genus *Acrosterigma* Dall, 1900

Type species: *Cardium dalli* Heilprin, 1887, by original designation

<sup>1</sup> NOTE: This paper was left incomplete by Jacques Vidal at the time of his death in September 2006. At my request, Mr. J.J. ter Poorten kindly accepted to read and to revise the manuscript as co-author. He completed and improved the text, and all the photographs were taken and added by him.

***Acrosterigma sudhiranti* n. sp.**

Figs 1-6; 11; table 1

**Type material.** Holotype MNHN Moll 9689, Philippines, Panglao Isl., depth 140 m, in sand, dead collected (Figs 1-3); paratype 1 MHNbX 2007.TY.1, same sample as holotype (Fig. 4); paratype 2 ZMA Moll. 4.07.009, Bohol, Balicasag Isl., tangle nets, depth 80–150 m, 10.2006; paratype 3 TP 3220, same sample as paratype 2 (Fig. 6).

**Other material examined.** Philippines, Bohol, Balicasag Isl., 06.2004. (coll. HD 14267, 1 p.v.); Mindanao, Balut Isl., by tangle nets, deep sea. (coll. SH, 2 p.v., fig. 5); Talikud Isl. 06°56'N–125°41'E, near Davao, with tangle nets, collected by fishermen, 01/02.2006 (coll. TP 3009, 1 p.v.).

**Description.** Shell of medium size (holotype H 37.8 mm: largest specimen observed), relatively thin-shelled, slightly elongated (mean L/H = 0.835, range 0.80–0.86, n = 8); appreciably tumid (mean W/L = 0.814, 0.80–0.84, n = 8); rather quadrate, with a straightening of the posterior and anterior margin, both occasionally even slightly concave (paratype 2). Lunula small, white, identical on both valves, almost flat, except for slight raising of the margins besides umbo.

Colouration: externally whitish or yellowish with irregular red-brownish stains, predominantly on median-posterior part, disappearing in adult marginal zones: posterior slope remaining entirely pinkish brown or orange yellow. Internally, pink stains homologous of exterior ones, gradually diminishing towards margins.

Hinge appreciably asymmetrical with anterior laterals more distant from cardinals than posterior laterals. Cardinal teeth the right valve joined at their base.

Mean rib number: 60.75, range 55–65, n = 8.

Rib morphology: posterior slope with about 10 ribs, flat, divided into two parts: posterior half ornamented with regularly disposed small oblique scales; anterior half smooth. Interstices very thin. In addition, ribs divided by longitudinal furrow situated below scales.

In the median-posterior quarter ribs become progressively more raised, with an asymmetrical trapezoidal profile with three parts: a higher posterior flank with same scales as on posterior slope; a smooth flat top zone slightly sloping onwards; a very short anterior flank generally smooth but occasionally, by places, with irregular very oblique diffuse long scales, present too on the posterior slope, but more tubercular. Top furrow observed on most posterior ribs remains present, separating posterior flank from top zone; this furrow progressively disappears onwards. On anterior half of shell ribs become more rounded and scales change progressively into commarginal ridges encroaching upon whole surface of ribs.

**Range and habitat.** Only known from the Philippines. Collected at depths between 80–150 m.

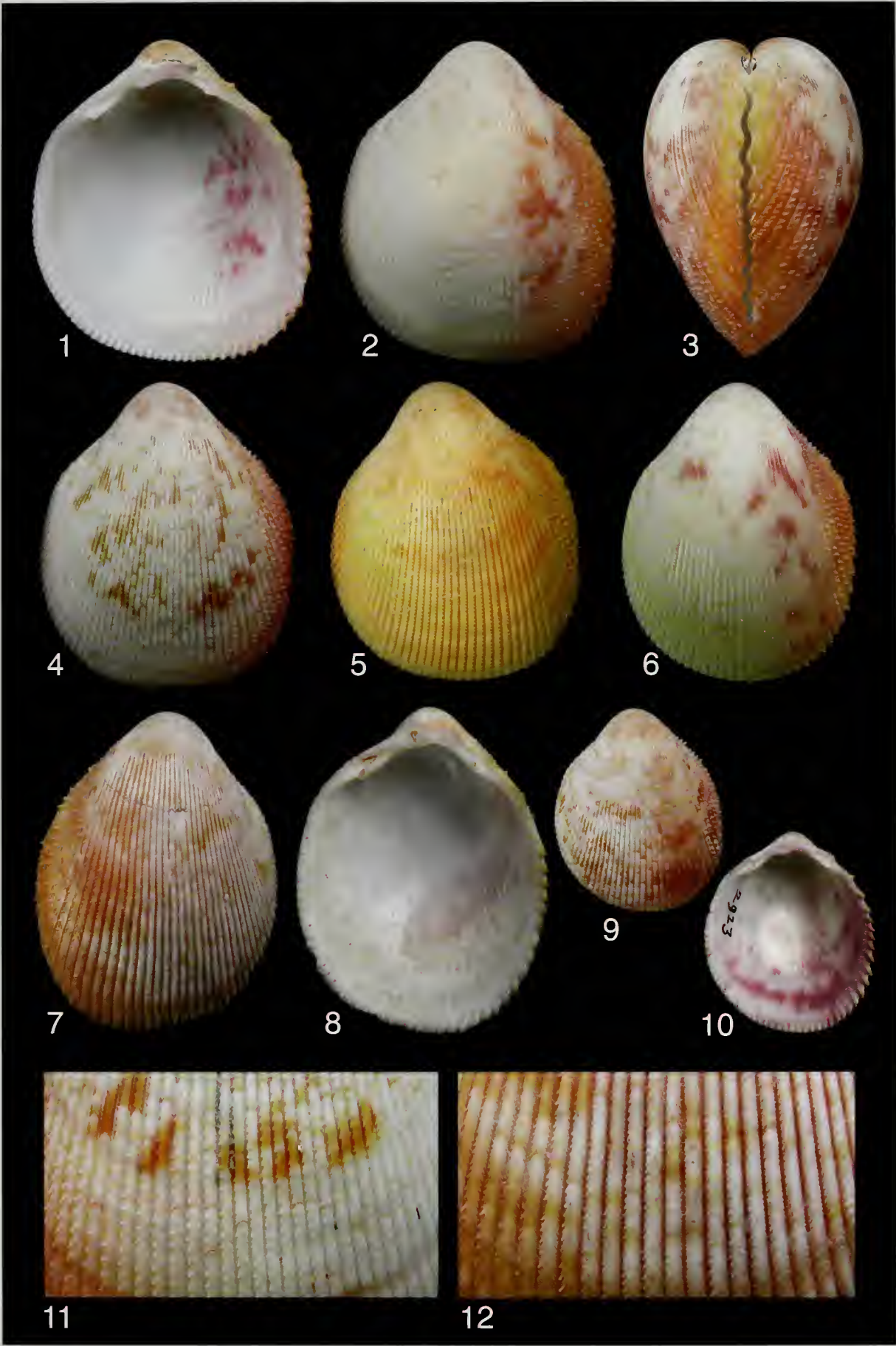
**Remarks.** *Acrosterigma sudhiranti* mainly differs by the different rib number (55–65) from the other extant members of its species group viz. *A. uniornatum* Vidal, 1999 (36–43 ribs); *A. suluanum* Vidal, 1999 (40–45 ribs); *A. amirante* Vidal, 1999 (52–55 ribs) and *A. profundum* Vidal, 1999 (55–63 ribs, Figs 7–10, 12). The latter is clearly its closest congener. *A. sudhiranti* can be differentiated from this species by a more quadrate shape, a thinner, slightly less elongated shell and by the very poor development of the secondary serrations on the anterior flank of the ribs (Fig. 11), while on *A. profundum* (Fig. 12) they are numerous, constant and nearly as well developed as those on the posterior rib flanks. Besides, it has a different distribution and known so far only from the Philippines, whereas *A. profundum* is known from New Caledonia, Marshall Islands (both Vidal, 1999) and Indonesia, Flores Sea (coll. TP 2923, Fig. 9–10). Finally, within the restrictions of the limited material of both species available, *A. sudhiranti* appears to have more yellow elements in its colouration, in some cases limited to the posterior margin, sometimes covering the whole shell (Fig. 5). The red-brownish stains do not extend to the anterior margin, which does occur on *A. profundum* (Fig. 9).

**Figures 1–11**

**1–6, 11.** *Acrosterigma sudhiranti* n. sp. **1–3.** Philippines, Panglao Isl., 140 m, H 37.8 mm, holotype, MNHN Moll 9689. **4.** Philippines, Panglao Isl., 140 m, H 37.0 mm, paratype 1, MHNbX 2007.TY.1. **5.** Mindanao, Balut Isl., by tangle nets, deep sea, H 33.0 mm, coll. SH. **6.** Bohol, Balicasag Isl., tangle nets, 80–150 m, 10.2006, H 34.8 mm, paratype 3, coll. TP 3220. **11.** Detail of median part of right valve, paratype 1.

**7–10, 12.** *Acrosterigma profundum* Vidal, 1999. **7–8.** New Caledonia, 20°16'S–163°52'E, 245–268 m, H 36.7 mm, holotype MMHN Moll 9788. **9–10.** Indonesia, 06°10'690"S–122°41'489"E, 3–45 m, leg. H. Morrison, 20.10.2005, H 21.6 mm, coll. TP 2923. **12.** Detail of median part of right valve, holotype.





**Etymology.** *Acrosterigma suduirauti* is named after Mr Guillot de Suduiraut, Philippines, who sampled the holotype and paratype 1 and kindly donated this material to science.

**ACKNOWLEDGEMENTS**

Thanks are due to Mrs. V. Héros, MNHN, Paris, France and Mr. H. Dekker, Winkel, The Netherlands for the loan of material and to Mrs. S. Hobbs, Cape

May, U.S.A. for her friendship, hospitality and access to her collection.

**REFERENCE**

Vidal, J. 1999. Taxonomic review of the elongated cockles: genera *Trachycardium*, *Vasticardium* and *Acrosterigma* (Mollusca, Cardiidae). *Zoosystema* 21(2): 259-335.

<i>Acrosterigma suduirauti</i> n.sp.	<i>H</i>	<i>L</i>	<i>W</i>	<i>L/H</i>	<i>W/L</i>	<i>Ribs</i>
Holotype MNHN 9689	37.8	32.6	26.1	0.86	0.80	63
Paratype 1 MHNbX 2007.TY.1	37.0	31.5	25.4	0.85	0.81	60
Paratype 2 ZMA 4.07.009	35.1	28.3	23.5	0.81	0.83	64
Paratype 3 TP 3220	34.8	28.0	23.5	0.80	0.84	60
Coll. TP 3009	36.2	30.5	24.6	0.84	0.81	65
Coll. HD 14267	34.4	28.4	23.3	0.83	0.82	59
Coll. SH / 1	33.0	27.7	22.2	0.84	0.80	55
Coll. SH / 2	33.9	28.9	23.1	0.85	0.80	60
<i>Mean values</i>				<i>0.835</i>	<i>0.814</i>	<i>60.75</i>

Table 1. Measurements and rib count of *Acrosterigma suduirauti* n. sp. Sizes in mm.